an intermediate tube sheet provided horizontally in the shell wherein the reaction tube is expanded to at least one groove formed in the reaction tube-fixing part of the intermediate tube sheet for substantially shielding spaces between the tubes ~~and the intermediate tube sheet~~ and partitioned with the intermediate tube sheet to form a shield for ~~forming~~ partitioning a plurality of chambers; and

an expansion joint formed around the periphery of each of the chambers, wherein the expansion joints are capable of absorbing distortion generated by an increase or decrease of heat of a heat medium,

and wherein a migration of the heat medium between the chambers partitioned with the shield is repressed when the chambers are substantially closed, and a reaction or treatment in the one chamber is performed at a different temperature from that in the other chamber.

2. (Original) A reactor according to claim 1, wherein a number of the grooves which is provided to the tube sheet and which faces to the reaction tube is two.

3. (Original) A reactor according to claim 1, wherein a number of the grooves which is provided to the tube sheet and which faces to the reaction tube is three.

4. (Currently Amended) A reactor according to claim 1, wherein a number of the chambers ~~formed~~ is two to form an upper chamber and a lower chamber, and a reaction or treatment in the upper chamber is performed at a different treatment from that in the lower chamber.

5. (Original) A reactor according to claim 1, wherein the expansion joint is roughly semicircular, with the inner face of the joint directed toward the inner side of the reactor and the upper and lower ends of the joint connected to the almost horizontally cut shell of the reactor.

6. (Original) A reactor according to claim 1, wherein an amount of water migrating from the upper chamber to the lower chamber fulfills the relation, amount of leakage (ml/hour per reaction tube) $\leqq 1.27 \times 10^{-5} \times$ pressure difference (Pa), in a hydraulic test.

7. (Original) A reactor according to claim 1, wherein the amount of water migrating from the lower chamber to the upper chamber fulfills the relation, amount of leakage (ml/hour per reaction tube) $\leqq 1.27 \times 10^{-5} \times$ pressure difference (Pa), in the hydraulic test.

8. (Original) A reactor according to claim 1 further comprising a baffle plate substantially horizontally disposed in the reactor.

9. (Original) A reactor according to claim 1 further comprising a circular conduit for transferring a heat medium around the reactor.

10. (Original) A reactor according to claim 4, wherein different kinds of reactions are performed.

11. (Currently amended) A method for producing (meth)acrylic acid by the reaction of catalytic gas phase oxidation which comprises the step of contacting a propylene-containing gas or an isobutylene-containing gas to a catalyst filled in ~~using~~ a reactor set forth in claim 1.